step 3 is the algorithm in which inputs sequentially select outputs, and which may be implemented by using a pipeline technique as defined in claim 1.

REMARKS

In reviewing the present application as filed, a number of minor typographical errors were noted. The errors have been corrected by way of the present Supplemental Preliminary Amendment without the addition of any new matter.

Also note that new claims 22 and 23 have been added. These claims further describe the invention and do not add any new matter.

As a convenience to the Examiner, an Appendix is attached which contains actual substitute pages for the specification and claim pages. Also attached are hand marked-up pages which clearly demonstrate that no new matter is being added to the application.

Respectfully submitted,

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MARKED-UP COPY OF AMENDMENT

IN THE SPECIFICATION

Please amend the specification as follows:

Page 5, please replace line 14, with the following:

--reduced: the number of SOAs in a switch is decreased to $2N\sqrt{N}$ while $N\ \sqrt{N} \times \sqrt{N}$--.

Page 8, please replace lines 2-3, with the following:

--smallest integer not smaller than x. Also, input I resets its counters cij, $0 \leq j \leq N - 1$, in time slots [1] $m F + 1 - N + I$, where [1] $m \geq \lceil N/F \rceil$. Time diagram for this first case of WRRGS--.

Page 8, please replace line 18, with the following:

--reserves outputs for frames F_3 and F_2. For a reasonable assumption that $F \geq N$, an input--.

Page 8, please replace line 25, with the following:

--time slots in future, $k + N - i$ and $k + 2 \cdot N - i$ within frames $\lceil (k + N - i)/F \rceil$ and $\lceil (k + 2 \cdot N$ - --.

Page 8, please replace line 28, with the following:

--$\leq j \leq N - 1$, in time slots [1]$mF + 1 - 2 \cdot N + i$, where [1]$m \geq \lceil 2 \cdot N/F \rceil$. Figure 5 shows the time.--.

Page 9, please replace line 14, with the following:

-- portion of bandwidth, Δp_{ij}, it is accepted if:--.

Page 9, please replace line 17, with the following:

--and input-output pair (i, j) is assigned $\Delta a_{ij} = \lceil \Delta p_{ij} \cdot F \rceil$ new time slots per frame. We will--.

Page 9, please replace line 21, with the following:

--pair (i,j), $0 \leq i, j \leq N - 1$, if the following condition holds:--.

Page 10, please replace line 16, with the following:

-- pair (i, j), $0 \leq i, j \leq N - 1$, if the following condition holds:--.

Page 11, please replace line 2, with the following:

--since $a_{ij} \geq 1$. Because inequality (4) implies inequality (2), Lemma 1 directly follows --.

Page 11, please replace line 5, with the following:

--pair (i, j), $0 \leq i, j \leq N - 1$, if the following condition holds:--.

Page 11, please replace line 11, with the following:

-- Admission control in WRRGS is simple, new Δa_{ij} time slots are assigned to input- --.

Page 11, please replace line 16, with the following:

-- Only input i has to update the value of $a_{ij} \leftarrow a_{ij} + \Delta a_{ij}$, $0 \leq j \leq N - 1$, in order to set the--.

Page 13, please replace line 20, with the following:

-- long as $rN \leq rF$, which is the case of interest. In a conclusion, in arbitrary block of frames the--.

IN THE CLAIMS

Please amend the claims as follows:

--4. (Amended) The method of claim 1, comprising a pipeline technique where input *i*,

i=0,1,...,N-1, chooses an output from group of outputs l, l=0,1...,p-1, for time slot k in time slot $k[+]\underline{-}((N-i)*p-l)$ where p is the number of time slots required for one selection.

6. (Amended) The method of claim 2, comprising a pipeline technique where input i, $i=0,1,...,N-1$ releases an output from group of outputs $l, l=0,1,...,p-1$, for time slot $k+mF$, m=1,2,... in time slot $k-((N-i)*p-l)\underline{-Np}$, and input i chooses an output from group of outputs l for time slot $k+mF$, m=1,2,... in time slot $k[+]\underline{-}((N-i)*p-l)$ where p is the ratio of the durations of the reservation time slot and (data) time slot.

12. (Amended) The method of claim 1 <u>and 2</u> further comprising the step of negotiating values of time slots per frame associated with input-output pairs, wherein input-output pair (i,j) can be allocated additional Δa_{ij} time slots per frame of length F if it holds that:

$$\sum_m a_{im} + \sum_m a_{mj} - a_{ij} + \Delta a_{ij} \le F ,$$

where $a_{kl}, 0 \le k,l \le N-1,$ is the number of time slots previously assigned to input-output pair (k,l), and N is the number of inputs and outputs.

13. (Amended) The method of claim 1 <u>and 2</u> further comprising the step of negotiating values of time slots per frame associated with input-output pairs, wherein input-output pair (i,j) can be allocated additional Δa_{ij} time slots per frame of length F if it holds that:

$$\sum_m a_{im} + \Delta a_{ij} \le (F+1)/2, \quad \sum_m a_{mj} + \Delta a_{ij} \le (F+1)/2,$$

where $a_{kl}, 0 \le k,l \le N-1,$ is the number of time slots previously assigned to input-output pair (k,l).

14. (Amended) The method of claim 1 <u>and 2</u> further comprising the step of updating the number of credits per frame assigned to input-output pair, when its bandwidth request is accepted, or when it releases previously reserved bandwidth:

$$a_{ij} \leftarrow a_{ij} + \Delta a_{ij}$$

17. (Amended) The method of claim [3] <u>13</u> wherein applied to the bandwidth allocation

in wide area network, wherein switches in wide area network advertise to other switches reserved bandwidth on all its input and output links:

$$B_i \sum_m a_{im} / F,\ B_j \sum_m a_{mj} / F, 0 \le i, j \le N-1,$$

where B_i, B_j, are bit-rates of the corresponding links. When new bandwidth ΔB is requested between two nodes in the network, then all links for which:

$$\Delta B > B_l / 2 - B_l^r,$$

are excluded from the network if B_l is the link bit-rate, and B_l^r is the link reserved bit-rate (bandwidth), and bandwidth is reserved according to any routing protocol (such as OSPF) using remaining links from the source to the destination.--.